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EXAMINER	
MEROUAN, ABDERRAHIM	

ART UNIT	PAPER NUMBER
4192	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/581,222	BARENBRUG ET AL.	
	Examiner	Art Unit	
	ABDERRAHIM MEROUAN	4192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *1* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10581222/01jun2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because it contains the legal terms: said and means. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 13 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hayhurst (U.S. PGPUB 20010012018 A1) hereinafter referred as Hayhurst.

As per claim 13 Hayhurst teaches:

Supplying data and addressing means of a 3D display device (Hayhurst Figure 1; Page 3, paragraph [0026] , line 1, lines 23 to 25)

wherein for a main view point objects in the form of at least one main view point Z-stack comprising stack layers are rendered with RGB and Z-values (Hayhurst Page 2 ,Paragraph [0010] , lines 8 to 14)

construction from the at least one main view point Z-stack , z-stacks for additional viewpoints, (Hayhurst Page 2 ,Paragraph [0011] , lines 2 to 7)

and generating from the Z-stacks for additional viewpoints by means of Z-tracing data to be supplied to the addressing means , (Hayhurst Page 2 ,Paragraph [0012] , lines 2 to 11)

3. Claim 1 and 9 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Dietrich, JR et al. (U.S. PGPUB 20030179220A1) hereinafter referred as Dietrich.

As per claims 1 and 9, Dietrich teaches:

a rasterizer for transversing a surface grid over a surface of primitives of said 3D images for all N views, (Dietrich, FIG.1A-1, Page 3. Paragraph [0048], lines 1 to 2; Page 4. Paragraph [0049], line 1)

a shader unit for determining a color of the output of the rasteriser and forwarding a shaded color sample along with its screen coordinates, (Dietrich, FIG.1A-1, Page 4. Paragraph [0049], lines 1 to 3)

and N screen space resamplers each for resampling the shaded color sample determined by said shader means according to one of the N views. (Dietrich, FIG.1A-1, Page 4. Paragraph [0049], lines 9 to 10)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 2 to 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich, JR et al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich as applied to claim 1 above, In view of Wood (U.S. Patent 6567095 B2) hereinafter referred as Wood.

As per claim 2. Dietrich teaches: Computer graphics processor according to claim 1.

Dietrich doesn't teach:

a texture memory for storing texture maps,

wherein said surface grid is derived from a texture map being associated with said primitive and being stored in said texture memory

Wood teaches:

a texture memory for storing texture maps,(Wood, FIG. 1, Column 6, lines 13 to 15)

wherein said surface grid is derived from a texture map being associated with said primitive and being stored in said texture memory (Wood; Column 2, lines 2 to 7)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention: that the use of the texture memory to store texture maps as taught by Wood into the process of the Dietrich is for a compact storage and a high speed access to the textel.

6. As per claim 3 Dietrich in view of Wood teaches: Computer graphics processor according to claim 1 and 2

Dietrich in view of Wood doesn't teach:

wherein a grid associated to one of the texture maps stored in the texture memory is chosen as surface grid,

if said texture map is addressed independently.

said texture map is based on a 2D texture,

and the texture coordinates at the vertices do not make up a degenerate primitive.

Wood teaches:

wherein a grid associated to one of the texture maps stored in the texture memory is chosen as surface grid, (Wood; Column 2, lines 2 to 7)

if said texture map is addressed independently. (Wood; Column 2, lines 47 to 54)

said texture map is based on a 2D texture, (Wood; Column 4, lines 17 to 20)

and the texture coordinates at the vertices do not make up a degenerate primitive. (Wood; Column 4, lines 14 to 18)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use of the texture map as taught by Wood into the process of the Dietrich to provide for storing 3D model data to generate images as desired.

7. As per claim 4 Dietrich in view of Wood teaches: Computer graphics processor according to claim 1, 2, and 3

Dietrich in view of Wood doesn't teach:

the texture map with the largest area in texture space is chosen

if more than one texture maps stored in said texture memory fulfill said three requirements a)-c).

Wood teaches:

the texture map with the largest area in texture space is chosen if more than one texture maps stored in said texture memory (Wood; Column 6, lines 7 to 8)

fulfill said three requirements a)-c). (Wood; Column 6, lines 8 to 10)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the three requirements as taught by Wood into the process of the Dietrich to provide a more flexible and efficient texture storage when generating a new image

8. Claim 10 to 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich, JR et al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich as applied to claim 9 above, In view of Wood (U.S. Patent 6567095 B2) hereinafter referred as Wood.

As per claim 10. Dietrich teaches: Method of rendering N views of 3D images according to claim 9.

Dietrich doesn't teach:

storing texture maps, a texture memory

wherein said surface grid is derived from a texture map being associated with said primitive and being stored in said texture memory

Wood teaches:

storing texture maps, a texture memory,(Wood, FIG. 1, Column 6, lines 1 to 3)

wherein said surface grid is derived from a texture map being associated with said primitive and being stored in said texture memory (Wood; Column 2, lines 2 to 7)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention: that the use of the texture memory to store texture maps as taught by Wood into the process of the Dietrich is for a compact storage and a high speed access to the textel.

9. As per claim 11 Dietrich in view of Wood teaches: Method of rendering N views Of 3D images according to claim 9 and 10

Dietrich in view of Wood doesn't teach:

wherein a grid associated to one of the texture maps stored in the texture memory is chosen as surface grid,

if said texture map is addressed independently.

said texture map is based on a 2D texture,

and the texture coordinates at the vertices do not make up a degenerate primitive.

Wood teaches:

wherein a grid associated to one of the texture maps stored in the texture memory is chosen as surface grid, (Wood; Column 2, lines 2 to 7)

if said texture map is addressed independently. (Wood; Column 2, lines 47 to 54)

said texture map is based on a 2D texture, (Wood; Column 4, lines 17 to 20)

and the texture coordinates at the vertices do not make up a degenerate primitive. (Wood; Column 4, lines 14 to 18)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use of the texture map as taught by Wood into the process of the Dietrich to provide for storing 3D model data to generate images as desired.

10. As per claim 12 Dietrich in view of Wood teaches: Method of rendering N views Of 3D images according to claim 9 ,10 and 11

Dietrich in view of Wood doesn't teach:

the texture map with the largest area in texture space is chosen

if more than one texture maps stored in said texture memory fulfill said three requirements a)-c).

Wood teaches:

the texture map with the largest area in texture space is chosen if more than one texture maps stored in said texture memory (Wood; Column 6, lines 7 to 8)

fulfill said three requirements a)-c). (Wood; Column 6, lines 8 to 10)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the three requirements as taught by Wood into the process of the Dietrich to provide a more flexible and efficient texture storage when generating a new image.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich, JR et al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich as applied to claim 1 above. In view of Hayhurst (U.S. PGPUB 20010012018 A1) hereinafter referred as Hayhurst.

As per claim 5.Dietrich teaches: Computer graphics processor according to claim 1

Dietrich doesn't teach:

said renderer having an input for a 3D model and an input for at least one viewpoint for rendering image information for supplying to the addressing means

wherein the renderer further comprises an initial part having an input for the 3-D model and for at least one main view point for rendering objects in the form of at least one main view point Z-stack having stack layers with color information and Z-values

the renderer further comprising
a Z-stack constructor in which, from the at least one main view point Z-stack -

generated by the initial stage, Z-stacks for additional viewpoints are constructed, and a further image information occlusion semantics stage for
generating image information from the z-stacks

Hayhurst teaches:

said renderer having an input for a 3D model and an input for at least one viewpoint for rendering image information for supplying to the addressing means(Hayhurst Figure 1; Page 3, paragraph [0026] , line 1, lines 23 to 25)

wherein the renderer further comprises an initial part having an input for the 3-D model and for at least one main view point for rendering objects in the form of at least one main view point Z-stack having stack layers with color information and Z-values (Hayhurst Page 2 ,Paragraph [0010] , lines 8 to 14)

the renderer further comprising
a Z-stack constructor in which, from the at least one main view point Z-stack (Hayhurst Page 2 ,Paragraph [0011] , lines 2 to 7)

generated by the initial stage, Z-stacks for additional viewpoints are constructed, and a further image information occlusion semantics stage for
generating image information from the z-stacks (Hayhurst Page 2 ,Paragraph [0012] , lines 2 to 11)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the Z-stack constructor as taught by Hayhurst into the process of the Dietrich to add Z-stack constructor for generating image information from Z-stacks.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich, JR et al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich as applied to claim 1 above In view of Wood (U.S. Patent 6567095 B2) hereinafter referred as Wood as applied to claim 2 and further in view of In view of Hayhurst (U.S. PGPUB 20010012018 A1) hereinafter referred as Hayhurst.

As per claim 5.Dietrich in view of Wood teaches: Computer graphics processor according to claim 1 and 2

Dietrich in view of Wood doesn't teach:

said renderer having an input for a 3D model and an input for at least one viewpoint for rendering image information for supplying to the addressing means

wherein the renderer further comprises an initial part having an input for the 3-D model and for at least one main view point for rendering objects in the form of at least one main view point Z-stack having stack layers with color information and Z-values

the renderer further comprising
a Z-stack constructor in which, from the at least one main view point Z-stack -

generated by the initial stage, Z-stacks for additional viewpoints are constructed, and a further image information occlusion semantics stage for
generating image information from the z-stacks

Hayhurst teaches:

said renderer having an input for a 3D model and an input for at least one viewpoint for rendering image information for supplying to the addressing means(Hayhurst Figure 1; Page 3, paragraph [0026] , line 1, lines 23 to 25)

wherein the renderer further comprises an initial part having an input for the 3-D model and for at least one main view point for rendering objects in the form of at least one main view point Z-stack having stack layers with color information and Z-values (Hayhurst Page 2 ,Paragraph [0010] , lines 8 to 14)

the renderer further comprising
a Z-stack constructor in which, from the at least one main view point Z-stack (Hayhurst Page 2 ,Paragraph [0011] , lines 2 to 7)

generated by the initial stage, Z-stacks for additional viewpoints are constructed, and a further image information occlusion semantics stage for
generating image information from the z-stacks (Hayhurst Page 2 ,Paragraph [0012] , lines 2 to 11)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use the Z-stack constructor as taught by Hayhurst into the process of the Dietrich to add Z-stack constructor for generating image information from Z-stacks.

13. Claim 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich, JR et al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich as applied in claim 1. In view of Hayhurst (U.S. PGPUB 20010012018 A1) hereinafter referred as Hayhurst as applied in claim 5 above, and further in view of Hanna et al. (U.S. Patent 006269175 B1) hereinafter referred as Hanna.

14. As per claim 6. Dietrich In view of Hayhurst teaches: Computer graphics processor according to claim 1 and 5

Dietrich In view of Hayhurst doesn't teach:

an object extracter for extraction of objects from a view point z- stack.

Hanna teaches:

an object extractor for extraction of objects from a view point z- stack. (Hanna , Column 11, lines 25 to 27)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention that adding an object extracter to the computer graphics processor as taught by Hanna into the process of the Dietrich in view of Hayhurst to provide an efficient view of 3D scenes on 3D display system

15. Claim 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich, JR et al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich as applied in claim 1, In view of Wood (U.S. Patent 6567095 B2) hereinafter referred as Wood as applied to claim 2 above and In view of Hayhurst (U.S. PGPUB 20010012018 A1) hereinafter referred as Hayhurst as applied in claim 5 above, and further in view of Hanna et al. (U.S. Patent 006269175 B1) hereinafter referred as Hanna.

16. As per claim 6. Dietrich In view of Hayhurst and in view of Wood teaches: Computer graphics processor according to claim 1 ,2 and 5

Dietrich In view of Hayhurst and in view of Wood doesn't teach:

an object extracter for extraction of objects from a view point z- stack.

Hanna teaches:

an object extracter for extraction of objects from a view point z- stack. (Hanna , Column 11, lines 25 to 27)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention that adding an object extracter to the computer graphics processor as taught by Hanna into the process of the Dietrich in view of Hayhurst to provide an efficient view of 3D scenes on 3D display system

17. As per claim 7. Dietrich In view of Hayhurst and farther in view of Hanna teaches: Computer graphics processor according to claim 1, 5 and 6

Dietrich In view of Hayhurst and farther in view of Hanna teach doesn't teach:

wherein the object extracter is arranged for extracting objects from the at least one main point view z-stack.

Hanna teaches:

wherein the object extracter is arranged for extracting objects from the at least one main point view z-stack. (Hanna , Column 11, lines 25 to 27)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention the use of the object extractor as taught by Hanna into the process of the Dietrich in view of Hayhurst to describe the functionality of the object extractor from at least one main point view z-stack.

18. As per claim 7. Dietrich in In view of Hayhurst and farther in view of Hanna teaches: Computer graphics processor according to claim 1, 2, 5 and 6

Dietrich in view of Hayhurst , in view of Wood ,and farther in view of Hanna teach doesn't teach:

wherein the object extracter is arranged for extracting objects from the at least one main point view z-stack.

Hanna teaches:

wherein the object extracter is arranged for extracting objects from the at least one main point view z-stack. (Hanna , Column 11, lines 25 to 27)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention the use of the object extractor as taught by Hanna into the process of the Dietrich in view of Hayhurst to describe the functionality of the object extractor from at least one main point view z-stack.

19. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich, JR et al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich as applied in claim 1. In view of Hayhurst (U.S. PGPUB 20010012018 A1) hereinafter referred as Hayhurst as applied in claim 5 above, and further in view of Hanna et al. (U.S. PGPUB 20010036307 A1) hereinafter referred as Hanna.

As per claim 8. Dietrich In view of Hayhurst teaches: Computer graphics processor according to claim 1 and 5

Dietrich In view of Hayhurst doesn't teach:

wherein the DOF rendering stage is arranged for DOF processing of the at least one main point view z-stack into a at least one main view point z-stack comprising DOF blurring.

Hanna teaches:

wherein the DOF rendering stage is arranged for DOF processing of the at least one main point view z-stack into a at least one main view point z-stack comprising DOF blurring.(Hanna, Page 1, Paragraph [0013], lines 3 to 6)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention the use of the DOF rendering stage as taught by Hanna into the process of the Dietrich in view of Hayhurst for a high image resolution.

20. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich, JR et al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich as applied in claim 1. In view of Wood (U.S. Patent 6567095 B2) hereinafter referred as Wood as applied to claim 2 above and in view of Hayhurst (U.S. PGPUB 20010012018 A1) hereinafter referred as Hayhurst as applied in claim 5 above, and further in view of Hanna et al. (U.S. PGPUB 20010036307 A1) hereinafter referred as Hanna.

As per claim 8. Dietrich in view of Wood and in view of Hayhurst teaches: Computer graphics processor according to claim 1,2, and 5

Dietrich In view of Hayhurst doesn't teach:

wherein the DOF rendering stage is arranged for DOF processing of the at least one main point view z-stack into a at least one main view point z-stack comprising DOF blurring.

Hanna teaches:

wherein the DOF rendering stage is arranged for DOF processing of the at least one main point view z-stack into a at least one main view point z-stack comprising DOF blurring.(Hanna, Page 1, Paragraph [0013], lines 3 to 6)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention the use of the DOF rendering stage as taught by Hanna into the process of the Dietrich in view of Hayhurst for a high image resolution.

21. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dietrich, JR et al. (U.S. PGPUB 20030179220A1), hereinafter Dietrich as applied to claim 9 above. In view of Burrell. (U.S. PGPUB 20030145008 A1) hereinafter referred as Burrell.

As per claim 14 Dietrich doesn't teach: Computer graphics processor according to claim 9

Dietrich doesn't teach:

Computer program product comprising program code means stored on a computer readable medium for performing a method according to claim 9, when said program is run on a computer.

Burrell teaches:

Computer program product comprising program code means stored on a computer readable medium for performing a method according to claim 9, when said program is run on a computer. (Burrell Page 4, Paragraph [0034], lines 7 to 9)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention, to run a program code stored in a computer as taught by Burrell into the process of the Dietrich, to perform the method of displaying 3D scenes on 3D display system.

Conclusion

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abderrahim Merouan whose telephone number is (571) 270-3780. The examiner can normally be reached on Monday to Friday 7:30 AM to 5:00 PM.

23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached on (571) 272-3011. The fax phone number for the organization where this application or proceeding is assigned is 571-270-5254.

24. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abderrahim Merouan
Examiner
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/Pankaj Kumar/

Supervisory Patent Examiner, Art Unit 4192